

REMARKS

Favorable consideration and allowance are respectfully requested for claims 1, 2, 8, 9, 10, 11, 17, 18, 19, and 20 in view of the foregoing amendments and the following remarks.

Claims 1, 11, and 20 have been amended to more clearly define the invention. The basis for these changes can be found in previously pending claims 7 and 16. Accordingly, no new matter has been added. Claims 3-7 and 12-16 are cancelled by this amendment, without prejudice.

Rejection under 35 U.S.C. § 102(b)

Claims 1-20 were rejected under 35 U.S.C. § 102(b) over Miura et al. (WO 99/36171, referencing its English equivalent, application No. EP 1055453A1 (the '171 reference). This rejection is respectfully traversed.

The presently claimed invention relates to a memory medium and a process for making and using the same. Claim 1 recites a memory medium. The memory medium includes luminescent trivalent Sm ions (Sm^{3+}). The memory medium also includes a plurality of spots containing luminescent bivalent Sm (Sm^{2+}). The memory medium originally includes a dispersion of trivalent Sm ions (Sm^{3+}), and a laser is used to create spots where the valence of the Sm ions is *decreased* from (Sm^{3+}) to (Sm^{2+}). The memory medium is made of a fluoride glass that includes aluminum fluoride.

Claim 11 is directed to a process for producing a memory medium, and claim 20 is directed to the use of the memory medium. Among other steps, claim 20 recites irradiating the medium with a laser beam having a wavelength that selectively excites the luminescent ions in the spots so that these ions emit light.

The '171 reference discloses an optical memory medium containing luminescent bivalent Sm ions (Sm^{2+}). The medium also includes a plurality of spots containing luminescent trivalent Sm ions (Sm^{3+}). See column 5, lines 32-35 of the '171 reference. The memory medium originally includes a dispersion of bivalent Sm ions (Sm^{2+}), and a laser is used to *increase* the valence of the Sm

ions in certain spots. These spots contain trivalent Sm ions (Sm^{3+}). See Example 2, column 5, lines 5-39. In each of its examples, the '171 reference discloses only *increasing* the valence of the luminescent ion contained in the medium. See column 4, line 52 – column 5, line 1; column 5, lines 32-38; and column 6, lines 2-9. Even the background section of the '171 reference discloses only *increasing* the valence of the luminescent ion in the medium. See column 1, lines 16-22.

The '171 reference does not teach beginning with a solid medium containing a dispersion of luminescent trivalent Sm ions (Sm^{3+}). Similarly, the '171 reference does not teach *reducing* the valence of these luminescent ions with a laser beam. According to Example 2 of the '171 reference, the medium contains luminescent bivalent Sm ions prior to laser beam irradiation. This is significantly different from the presently claimed invention which begins with a medium containing luminescent trivalent Sm ions and uses a laser to create spots containing luminescent bivalent Sm ions. It follows therefore, that the '171 reference does not teach a medium, or a process for making or for using, a medium as presently claimed.

Moreover, the presently claimed invention would not be obvious to one skilled in the art given the teachings of the '171 reference. There is no teaching or suggestion in the '171 reference that would cause one skilled in the art to arrive at the presently claimed invention. The '171 reference does indicate that, according to the invention, the laser beam irradiation "...induces valence change of the rare earth and/or transition metal ion..." See column 2, lines 1-10. However, the multiple examples of increasing the valence of the luminescent ion cause the '171 reference to teach away from reducing the valence of the luminescent ions. Taken as a whole, the teachings of the '171 reference discourage one skilled in the art from beginning with, for instance, a rare earth metal ion of a given valence and trying to reduce the valence with a laser. Further, the '171 reference provides no motivation to modify its teachings to arrive at the presently claimed invention.

Independent claims 1, 11, and 20 have all been amended to incorporate the aforementioned elements. Accordingly, withdrawal of the rejection of claims 1, 2, 8, 9, 10, 11, 17, 18, 19, and 20 is respectfully requested.

CONCLUSION

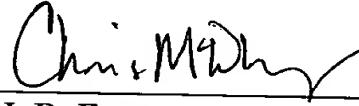
In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

Although a petition for an extension of time for three months is accompanied herewith, if necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #038788/49615).

Respectfully submitted,

September 4, 2003



J. D. Evans
Registration No. 26,269

Christopher T. McWhinney
Registration No. 42,875

CROWELL & MORING, LLP
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844